

### ABSTRACT OF THE DISCLOSURE

A method and system of controlling auto-ignition timing in an internal combustion engine cylinder in which the timing of auto-ignition in prechambers that are coupled to the cylinder is precisely controlled. The auto-ignition in the prechambers produces  
5 hot gas jets that are introduced into the charge space of the cylinder and rapidly induce a second auto-ignition of the mixture in the cylinder. By precisely controlling the timing of the auto-ignitions within the prechambers, the timing of the auto-ignition within the cylinders can, in turn, be precisely controlled.